

Remarks

The non-final Office Action dated April 11, 2008 has been reviewed and the following remarks are made in response thereto. In view of the following remarks, Applicants respectfully request reconsideration of this application and timely allowance of the pending claims. Written support for the claim amendments is found throughout the specification and in the original claims, thus Applicants submit that no new matter has been added.

Rejection under 35 U.S.C. § 102(e)

Claims 1, 2, 22-25, 28-31 and 34-39 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent 7,038,113 (Dixon *et al.*) (“Dixon”).

The Office Action alleges that Dixon discloses daidzein produced in plants transformed with isoflavone synthase, chalcone synthase, and chalcone reductase.

Without acquiescing to the merits of the Examiner’s rejection and solely to expedite prosecution, Applicants have amended the claims to further define the claimed invention. The amended claims provide for amino acid sequences of the claimed chalcone reductase, and isoflavone synthase in a plant or part thereof that does not naturally produce isoflavones and is active in both flavonol and anthocyanin biosynthesis.

As the specification details, others have tried to produced daidzein in plants, but were only able to demonstrate low levels of productions. The selection of plants that have both flavonol and anthocyanin activity though surprising results in markedly improved daidzein production when isoflavanone is introduced. While flavanol and anthocyanin may both be derivatives of 1,3 diphenylpropane flavinoid, Dixon does not disclose plants that actively produce both derivatives. In fact, the working examples of Dixon illustrate only flavanol derivatives in untransformed *Arabidopsis thaliana*, and flavanone derivatives in untransformed tomato plants. Accordingly, Dixon does not disclose selecting for both flavonol and anthocyanin activities in a plant.

Furthermore, Dixon does not disclose expression of SEQ ID NO: 2 or SEQ ID NO: 4 in a plant. Dixon fails to disclose a plant that comprises one or more nucleotide sequences encoding a chalcone reductase of the amino acid of SEQ ID NO: 2 and one or more nucleotide sequences encoding an isoflavone synthase comprising the amino acid sequence of SEQ ID NO: 4. Dixon also fails to disclose a genetically modified plant or part thereof that comprises one or more nucleotide sequences encoding a chalcone isomerase comprising the amino acid sequence of SEQ ID NO: 6.

Moreover, Dixon fails to disclose the claimed genetically modified plant or part thereof, wherein one or more nucleotide sequences encoding a chalcone reductase comprising SEQ ID NO: 1, one or more nucleotide sequences encoding an isoflavone synthase comprising SEQ ID NO: 3, and wherein one or more nucleotide sequences encoding a chalcone isomerase comprising SEQ ID NO: 5. Dixon also fails to disclose a nucleic acid that hybridizes to any of the claimed nucleotide sequences under the claimed hybridization conditions. For at least these reasons, Applicants respectfully request that the rejection be withdrawn because the reference fails to disclose each and every feature of the claimed invention.

Conclusion

Except for issues payable under 37 C.F.R. 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **constructive petition for extension of time** in accordance with 37 C.F.R. 1.136(a)(3).

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Respectfully submitted

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